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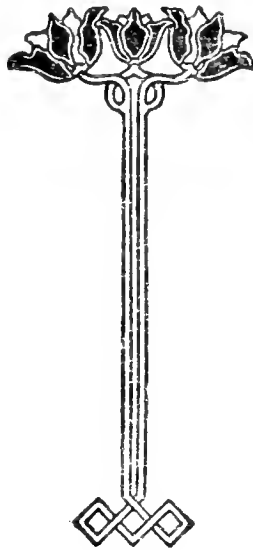
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REPORT

Of the

Committee on Elimination of Subject Matter



Printed by the

Iowa State Teachers' Association





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Elimination Of Obsolete and Useless Topics and Ma- terials From the Common Branches

**Being a Report of a Committee of the
Iowa State Teachers' Association
November 1915**

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**For additional copies apply to Secretary of Committee
DEPARTMENT OF PUBLIC INSTRUCTION
Des Moines, Iowa**

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CONTENTS.

	PAGE
1. Introductory Statement	3
2. The Point of View	4
3. Arithmetic	6
4. Language and Grammar.....	13
5. Writing	19
6. Geography	28
7. Physiology and Hygiene.....	38
8. History	40
9. Spelling	44

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INTRODUCTORY STATEMENT

The Iowa State Teachers' Association in its Sixtieth Annual Session in Des Moines, November 5, 6 and 7, 1914, by resolution (No. 6) provided as follows:

“That this Association through its President should appoint a representative committee to study and to make a report upon the elimination of obsolete and useless topics and materials from the common school branches with a view that the efforts of childhood may be conserved and the essentials be better taught.”

In accordance with this resolution, Prof. John E. Stout, President of the Association, appointed the following committee:

Geo. H. Betts, Department of Psychology, Cornell College, Mount Vernon, Iowa.

W. F. Cramer, City Superintendent of Schools, Atlantic, Iowa.

W. L. Hanson, City Superintendent of Schools, Burlington, Iowa.

E. E. Lewis, Department of Education, University of Iowa, Iowa City, Iowa.

John R. Slacks, County Superintendent of Schools, Sac County, Sac City, Iowa.

C. W. Stone, Director Training School, Iowa State Teachers' College, Cedar Falls, Iowa.

G. M. Wilson, Department of Agricultural Education, Iowa State College, Ames, Iowa.

The committee began work at once through correspondence. After getting policies more or less outlined by this method, the first meeting was held in the State House at Des Moines, Saturday, January 9. At this meeting A. C. Fuller, Jr., of the State Department of Public Instruction was asked to act as the permanent secretary of the committee. Other meetings were held on Saturday, March 13, and on Saturday, October 16. The work of the committee, however, is not indicated by the number of meetings held, as there was constant correspondence and constant work looking toward final report.

The committee is particularly pleased that the report is unanimous not only in general spirit but in minor details. Every member of the committee realizes the great necessity of its work and the desirability of trying to perform the function for which it was created as fully as possible in the first report.

There has been no attempt to cover the entire field of elementary instruction. The subjects chosen for report may be taken as representative. It is possible that there is as much need for reconstruction of the work in reading, particularly in the intermediate and upper grades, as there is in any subject reported upon by the committee. It was simply a question of doing within the time the work that seemed best adapted to accomplish the purpose for which the committee was created. The report should be regarded as tentative and the committee asks that the school people of the state accept the report in the spirit of true inquiry and make an effort within the next year or so to test out its recommendations. That is the only correct educational procedure. It is thought that the report will stand this test successfully. In the meantime, organization should be secured for working out the positive program. This in itself is a large problem and worthy of the consideration of a select committee for the next two or three years. It was felt that this positive program was beyond the scope of the present committee.

The committee has kept in mind as its criterion throughout, the present needs of the child and his ability to comprehend. It is on this basis that eliminations have been recommended. The committee is agreed and recommends that all of the material indicated for omission in arithmetic, grammar, spelling, geography, physiology and history, be excluded from the examination questions used to test pupils for promotion from grade to grade, or for completion of the eighth grade work. The suggestion is made that this material be omitted also from the examination questions for teachers.

For the committee,

G. M. WILSON, *Chairman.*

1. THE POINT OF VIEW.

American education is today in the midst of a fundamental reconstruction looking toward greater concreteness and immediate efficiency as the aim. The practical idealism characteristic of the present trend of thought in this country re-affirms its faith in education, but rejects such traditional terms as *polish*, *culture*, or *discipline* as adequate fully to express the present educational purpose.

Education is becoming consciously democratic. It is no longer for the favored few, nor to fit for certain highly specialized profes-

sions, as in times past. Its benefits are for every person without regard to station, and its help must extend to every avenue of interest and activity. The business of education is *to increase the efficiency of all our people at every point of contact in life.*

This means that, while education is yielding its culture and discipline, it must also give the practical knowledge and develop the concrete efficiency required to found and maintain better homes; secure larger returns from labor; participate more intelligently in civic affairs; live more healthful and efficient lives. In short, education is to open the door to stronger, better and more fruitful living at all levels of experience as men and women touch elbows in the day's work and its play.

But education-time is short, and the field to be mastered large. No time should be wasted in studying useless material. Because of the realization of this fact protests are coming in from every side against the emptiness and waste of much that has heretofore passed as education. There is an insistent and growing demand that the subject matter of our school curriculum shall be revised to bring it into accord with present concepts and aims of education.

This point of view applied to elementary education suggests certain fundamental reconstructions both in its purpose and its subject matter.

First of all, the elementary school must not be made to serve chiefly as a *preparatory school for the high school*, as has been too much the case in the past. Education has been organized from the top down, each lower school being shaped to fit for the next higher. But of the children entering the elementary school, three-fifths never go beyond the eighth grade. The great problem of the elementary school is, therefore, to provide the best education possible for those who never go any further. The curriculum of the grades must to this end be calculated to give boys and girls before the age of 14 years the fundamental equipment for meeting the problems and demands that await them. They must have placed in their possession (1) the concrete and fundamental *knowledge* most closely related to their future interests and work. They must have developed in them (2) the right *attitude* toward the common social and civic duties and relations, toward labor and achievement, and toward morality. They must also be given (3) some degree of *skill* in the use of their powers, and right standards of achievement.

Second, the dogma of formal discipline must no longer be allowed to dominate the elementary curriculum. For some two hundred years dogma has dictated a large proportion of the subject matter of the elementary school as well as of the high school. Recent educational science has shown that, even if the effects of formal discipline cannot be wholly denied, yet a system of education resting on this foundation is relatively barren and wasteful. The powers and capacities of the individual can be trained even better upon fruitful than upon barren subject matter, while at the same time he is gaining the practical knowledge, developing the attitude and attaining the skill necessary to successful achievement.

Not only is this point of view thoroughly grounded in educational science, but the general public, guided by common sense and intuition, has joined with educational science in demanding a change from the old disciplinary curriculum to a course of study more closely related to present day needs and conditions. This is to say that both from the professional and public point of view the relatively useless subject matter still to be found in so large proportion in the elementary schools of Iowa must be eliminated, giving the time and energy formerly consumed upon these barren subjects to fruitful and useful material.

It is the problem and duty of this committee to recommend to the Iowa State Teachers' Association such eliminations and reductions.

ARITHMETIC.

To Dr. Frank M. McMurry belongs the credit of starting the present movement for the elimination of useless material from the arithmetic course. At the Department of Superintendence in 1904, he made his now famous report. The work was carried forward as indicated in the discussion below, but the important fact to note here is that the recommended eliminations have been substantially agreed upon by progressive school men throughout the entire country. They are therefore submitted by the committee with entire confidence.

I. ELIMINATIONS RECOMMENDED.

FUNDAMENTALS:

Omit formal number work in the first year. Numbers will be learned in this grade but should be taught only incidentally. The

fundamental operations, addition, subtraction, multiplication and division, should be well taught in the other grades.

GREATEST COMMON DIVISOR:

Omit this entirely. If factoring is well taught, there is no need for spending time on the greatest common divisor.

FRACTIONS:

Omit complex fractions. The following problem taken from a text book in general use is an illustration of the kind of problems considered unnecessary.

$$\text{Simplify. } \frac{\frac{2}{9}}{\frac{1}{2} \text{ of } \frac{1}{3}} \div \frac{\frac{3}{4} \text{ of } \frac{6}{10}}{4\frac{1}{5}}$$

Fractions with large denominators should not be considered. Many school men doubtless recognize this "old timer."

$$\text{"Reduce to lowest terms } \frac{32989}{56981}$$

Complicated "puzzles" should be omitted. For example: "The head of a fish is 8 inches long. The tail is as long as the head and one-half the body, and the body is as long as the head and tail. What is the length of the fish?"

Omit long process of division of fractions. Use the method of inverting and multiplying.

Omit decimals beyond three places.

TABLES OF WEIGHTS AND MEASURES:

Omit Troy weight, apothecaries weight, surveyors measure, table for folding paper, and tables of foreign money.

The tables mentioned are used by special trades and professions and never used in ordinary life.

Reduction of compound numbers beyond two, occasionally three, places should be omitted.

PERCENTAGE:

Complicated and imaginary problems involving percentage should not be used. Those presenting a real situation in an inverted fashion do not prepare for solving the problem as it will actually occur. For example: "75% of \$240 is 50% of what I paid for a horse. What did the horse cost?"

Work in stocks and bonds should be confined to local activities such as the organization of a farmers' elevator company, a creamery, electric light plant, etc.

INTEREST:

But one method of finding simple interest should be taught. More methods simply confuse the learner. The new teacher should continue the pupils method.

Annual interest, compound interest, true discount and partial payments should be omitted.

PARTNERSHIP:

Omit partnership with time.

"Jones and Brown bought a farm for \$24,000. Jones furnished \$8,000 and Brown, \$16,000 of the capital. They sold the farm at a gain of \$4,000. How much of the gain should each receive?" Transactions similar to the above are common and should be given some attention.

EXCHANGE:

Omit foreign exchange. The process of buying a draft is so simple that special attention need not be given to domestic exchange.

COMPOUND PROPORTION:

Omit compound proportion.

SQUARE AND CUBE ROOT:

Omit cube root. If desired, it may be taken up later in the course in mathematics.

Square root is sometimes of value to the ordinary citizen and should be taught.

METRIC SYSTEM:

Omit the metric system. Until it comes into more general use, time spent on its study is lost.

MISCELLANEOUS:

Other topics, such as allegation, medial, duodecimals, progression, equation of accounts, circulating decimals, etc., are being omitted from later text books or placed in the appendix. The uselessness of such topics is so evident that a suggestion here is unnecessary.

II. CONSTRUCTIVE WORK.

The announcement of a definite course of study in arithmetic with the above eliminations in mind, made prior to the adoption or rejection of this report, would perhaps seem hasty and outside the

province of this committee. Elimination, however, is not the only need. Unless some constructive work is suggested, much of the force of the work already done will be lost. The committee therefore offers the suggestions given under the two following heads.

(a) CHARACTER OF THE PROBLEMS SELECTED:

Some reference has already been made to this point. More should be said. From a report by Albert Shields, Director of Bureau of Reference and Research of the New York City Board of Education, the following quotations are made:

“The arithmetical problem should be as real as the teacher can make it. It should be real in its elements, real in the relation which these elements bear to one another, real in the vividness of that relation, and real in the demand made upon the pupil for solution. * * * *

The material of a problem should not be extemporized out of a teacher's consciousness, but should be selected with reference to definite standards. This does not mean that every school or class should employ a different set of problems. Many of the public school children, whatever the character of the neighborhood, will have certain experiences and interests in common. There are few children, for example, who do not buy groceries.

“Doubtless there are activities of the farm which are poor arithmetical stuff for the city boy, nevertheless it is a bold assumption which would forbid a child in his arithmetic to wander from the beaten track of home and school and the streets which lie between. What should regulate selection of material, are the child's own instincts and interests. Ceaseless repetition of eggs, apples or chickens, however familiar they may be, is poor material for an exclusive arithmetical diet. Equally bad for a primary child would be a series of calculations on the orbits of the planets.

The teacher must be sure that the material as given is not presented in a setting contrary to any usual experience. Races at impossible rates of speed, purchases made according to no existing conditions of business, are improper, even though they may require arithmetical effort in their interpretation or solution. The following is an example: “When chicken is twenty-eight cents a pound, what will one cost weighing fifteen and three-quarters pounds?”

No one will deny the correctness of these statements. The average boy will take more interest in a problem which he knows he may some day experience than he will in an imaginary condition of

which he knows nothing. With that thought in mind it is recommended that the following topics be given more emphasis in the school course.

(b) TOPICS TO BE EMPHASIZED.

1. Reading and writing numbers—integers, common and decimal fractions.

2. Fundamental operations, addition, subtraction, multiplication and division with integers, common and decimal fractions. Factoring.

3. Denominate numbers, addition, subtraction and one place reduction. Tables of length, surface, cubic measure, liquid measure, dry measure, time, avoirdupois, U. S. money.

4. Mensuration. Perimeter, diameter, surface, contents of solids. Problems in finding area of plane surfaces such as walls, floors, sidewalks, etc. Contents of bins, corn cribs, wagon boxes, hay stacks, etc.

5. Fractions with the following denominators should be given more drill. 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 16, 20.

6. Emphasize Case I and Case II in percentage. Pupils should be drilled in changing the following fractions to per cent and vice versa: 1-2, 1-3, 2-3, 1-4, 3-4, 1-5, 1-6, 5-6, 1-8, 3-8, 5-8, 1-10, 1-12, 1-16, 3-16.

7. Business practices—borrowing, saving, loaning and investing money. Banking methods. Taxes, school bonds, city bonds, life insurance, keeping accounts. Formation of stock companies such as farmer's elevator, implement company, lumber yard, creamery. Assessments for losses, damages, etc., in drainage districts.

III. DISCUSSION.

In his presentation of desirable eliminations from the course of study at the Department of Superintendents, in 1904, Dr. Frank M. McMurry practically outlined the eliminations in arithmetic which have been since tested and generally accepted. The work of Dr. Rice in his articles in the Forum simply called attention to the necessity of improving the practice in the arithmetic work. Dr. C. W. Stone in his "Arithmetical Abilities" showed that the large amount of time being spent upon arithmetic in many school systems was not justified in increased ability to use the fundamentals and to reason. This pointed strongly toward the necessity of a thorough

revision of the arithmetic work. One of the early attempts to apply the social utility standard in a community in the making of a course of study by the superintendent of the Connersville (Indiana) schools a few years ago. To the surprise of the teachers, the business community voted almost unanimously for the omission of obsolete topics, the reason being that the leading business men of the community had found no use for these topics and they, therefore, readily agreed that they served no purpose and should be omitted from the arithmetic course. Mr. Wilson and his teachers also made a preliminary survey of courses of study throughout the United States which showed that in 1910 the topics suggested by Dr. McMurry were already being largely omitted from the courses of study in progressive city systems. Typical returns from this study are indicated in the following table:

GRADE-OCCURRENCE OF ARITHMETIC TOPICS.

(From 47 courses.)

Subject	Grades							
	I	II	III	IV	V	VI	VII	VIII
Numeration -----	37	37	33	18	7	4	4	1
Notation -----	34	39	33	18	7	4	4	1
Relation of numbers -----	10	11	6	5	5	4	4	1
Addition -----	23	39	33	28	13	9	6	3
Subtraction -----	24	39	34	26	13	9	6	3
Multiplication -----	10	28	30	25	15	15	10	10
Division -----	2	16	21	34	27	25	19	17
Fractions -----	10	28	22	31	34	28	24	24
Denominate numbers -----	11	20	23	34	30	31	29	22
Involution and evolution -----					1	1	7	16
Decimal fractions -----				5	23	12	8	1
Mensuration -----	6	8	10	11	12	14	14	12
Multiplication tables -----	2	8	20	18	7	5	7	6
Commission and brokerage -----						10	11	6
Insurance -----						10	9	6
Percentage -----					7	16	13	8
Ratio and proportion -----				1	3	8	6	9
Partnership -----						2	7	4
Partial payments -----							3	5
G. C. D. and L. C. M. -----					4	6		
Longitude and time -----						4	7	1
Profit and loss -----						7	17	2
Taxes -----						2	14	3
Duties -----						1	13	1
Banking -----							9	6
Exchange -----							4	4
Simple interest -----				1	2	12	23	4
Stocks and bonds -----							6	8
Business forms -----					1	4	15	6
Simple accounts -----				3	6	5	3	3

The plan of examining courses of study was carried further by Drs. Coffman and Jessup and their findings were embodied in report to the National Society for the Study of Education at the Richmond meeting of the Department of Superintendence. A copy of this report may be secured on application to Extension Division, State University, Iowa City, Iowa. This report covered the larger cities of the entire United States and included, also, returns from many county superintendents. While it is based entirely upon opinion, it showed a large tendency to accept the elimination of useless material from the arithmetic course and a tendency to place more time upon the usable, social and economic phases of the arithmetic work. Superintendent Slacks, as a member of your committee, made a similar study among county and city superintendents of the state of Iowa last fall. He found very general agreement among them with reference to the elimination program.

The above discussion shows a very remarkable development in the field of education during the last decade. The movement, of course, has extended to all lines of elementary work and has even affected the high school and the college. It has been supplemented and aided by other studies, particularly those relating to the elimination of pupils from the schools and the reasons why pupils leave school. The teacher in the one-room country school will certainly welcome the elimination program and pupils and teachers alike will agree that the topics suggested for elimination should be omitted from all examination tests. The text book difficulty must be overcome by the individual teacher. A recent careful examination of two popular texts by students at the Iowa State College showed that in one of them 16 2-3 per cent of the printed matter was devoted to material recommended by this committee for elimination. In the other 20 per cent of the printed matter related to such material. The committee does not suggest, because of this fact, a general attempt to remedy the matter by changing text books. This should be gradual, but the individual teacher should pencil out and omit from her work any of the topics suggested for elimination by this report.

IV. BIBLIOGRAPHY.

The following list of references is not assumed to be complete.

It contains some contributions referring to the question of elimination in general while others apply especially to some phase of the subject of arithmetic:

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 3. "Causes of Success and Failure in Arithmetic"—J. M. Rice, *Forum* Vol. 34, pp. 437-452.
 4. "Arithmetic Abilities and Some Factors in Determining Them"—Cliff W. Stone, State Teachers' College, Cedar Falls, Iowa. N. Y. Teachers College Contributions No. 19, 1908.
 5. "A Course of Study in Elementary Mathematics," for the Connersville Schools—G. M. Wilson, Iowa State College, Ames, Iowa.
 6. "Mathematics in the Elementary Schools of the U. S."—U. S. Bureau of Education, Bulletin No. 38, 1911.
 7. "The Teaching of Arithmetic"—David Eugene Smith—Ginn & Co., Chicago.
 8. "Economy of Time in Education"—U. S. Bureau of Education, Bulletin No. 38, 1913.
 9. "Measurements of Growth and Efficiency in Arithmetic"—S. A. Courtis.
 10. "Economy of Time in Arithmetic"—W. A. Jessup, State University of Iowa, Iowa City.
 11. "Time Distribution in Grade School Subjects"—A. C. Fuller, Jr., Des Moines; *Midland Schools*, December, 1914.
 12. "Report of the Committee on Elementary Course of Study"—Minnesota Educational Association.
 13. "How to Teach Arithmetic"—Brown & Coffman; Row, Peterson & Co., Chicago.
 14. "The Arithmetic Course of Study"—*Journal of Education*, Nov. 30, 1911; Dec. 21, 1911; Dec. 28, 1911.
 15. "City School Arithmetic"—*Journal of Education*, January 14, 1915.
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LANGUAGE AND GRAMMAR.

The committee recommends that grammar as such should not be studied below the seventh grade and preferably not below the eighth grade. The time devoted to language work below the eighth grade should not be decreased, but the character of the work should be changed.

There should be a positive language program for the lower grades including the correction of errors of common speech; the mechanics

of written composition; additional work in literature from the standpoint of appreciation and expression; work on enlarging the vocabulary including spelling and use of the dictionary; with stress upon oral expression or better oral composition.

The correction of grammatical errors should be continued thru all the grades and in all subjects. Language games in primary grades are especially helpful. Models of good expression and sentence construction in both oral and written work should be kept constantly before pupils of all grades. The more obvious errors of speech and colloquial expressions should be corrected taking up the simpler ones and those most frequently used first and adding others from month to month during the eight years. The number of errors made by children is relatively small as shown by Dean Charters in his study of the grammatical errors of the Kansas City Schools:

1. Subject of verb not in nominative case, as "Us girls went."
2. Predicate nominative not in nominative case, "They were John and him."
3. Object of verb or preposition not in the objective case, as "She gave it to Martha and I."
4. Wrong form of noun and pronoun, as "Sheeps—theirself—The problem what is."
5. First personal pronoun standing first in a series, as "Me and him." "I and James went."
6. Failure of the pronoun to agree with its noun in number, person and gender, as "Nobody can do what they like."
7. Confusion of demonstrative adjective and personal pronoun, as "Them things."
8. Failure of verb to agree with its subject in number and person, as "There is six," "You was," or "You wuz."
9. Confusion of past and present tenses, as "She give us four." "He ask me."
10. Confusion of past tense and past participle, as "I seen." "I have saw."
11. Wrong tense form, as "Attracted." "Had ought."
12. Wrong verb, as "Lay" for "lie"; "Ain't got"; confusion of *can* and *may*; of *shall* and *will*.
13. Incorrect use of mode, as "If I was in your place."
14. Incorrect comparison of adjectives, as "Joyfulest, beautifuler, more better, worsen."

15. Confusion of comparatives and superlatives, as "She is the tallest" (of two).

16. Confusion of adjectives and adverbs, as "He looked up quick." "That there book."

17. Misplaced modifier, as "He only went two miles."

18. Double negative, as "He isn't hardly old enuf."

19. Confusion of prepositions and conjunctions, as "He talks like he is sick."

20. Syntactical redundance, as "Mother she said so." "Where is it at?"

21. Wrong part of speech due to similarity of sound, as "I would of known;" *they* for *there*; *to*, *too*, *two*; *there* and *their*.

To these may be added mispronunciations, as "kin" for can, "git" for get, "yit" for yet, "jist" or "jest" for just, and colloquialisms, as "done got," "we-all" and "you-all." Don't over-work "and".

It was found that in written work by pupils of the seventh and eighth grades, identically the same kinds of errors were made and the following additional ones:

22. Failure to put a period at the end of a statement.

23. Failure to put a question-mark at the end of a question.

24. Failure to put an apostrophe to denote possession.

25. Omission of subject.

26. Omission of predicate.

27. Confusion of dependent and independent clauses.

The greatest problem in oral and written composition in the grades is the correction of the common errors noted above. In language work, there will be considerably incidental teaching of the terms of grammar. For examples: The kinds of sentences as to meanings; the three kinds of sentences as to form; the larger elements of the sentence—as subject, predicate, modifiers; the parts of speech; comparisons of adjectives and adverbs; agreement of the verb with its subject; the possessive form of nouns; case and person forms of pronouns; present, past and perfect forms of irregular verbs. Emphasize *this*—that the time to teach the term, or principle or correction of error, is when it is used or made.

Your committee concurs with Dean Charters in recommending the omission of the following items:

1. The exclamatory sentence.
2. The interjection.
3. The appositive.

4. The nominative of address.
 5. The nominative of exclamation.
 6. The objective complement.
 7. The adverbial objective.
 8. The indefinite pronouns.
 9. The objective used as a substantive.
 10. The classification of adverbs.
 11. The noun clause.
 12. The conjunctive adverbs.
 13. The retained objective.
 14. The modes (except possibly the subjunctive of "to be").
 15. The infinitive.
 16. The objective subject.
 17. The participle except the definition and the present and past forms.
 18. The nominative absolute.
 19. The gerund nominative absolute.
- Your committee add:
20. Sentences for analysis and parsing that involve subtle points of grammar.
 21. Formal parsing.
 22. Conjugation.
 23. Diagramming.
 24. Person of nouns.

These omissions are suggested that it may be possible to place the stress where it properly belongs in language training—viz., upon correct oral and written speech, opportunity to read much of the good literature suitable for various grades and make it possible to have more of the expression of the pupils' own thoughts. As noted before, formal grammar should be eliminated as a study save in the eighth grade.

While the work of Dean Charters in arriving at the language errors of children and the needed eliminations of grammatical terms is the only one particularly used in this discussion, other valuable contributions have been made and attention is called particularly to the first and last references under the bibliography. These contain a method of procedure in detecting the errors of a grade or of an individual pupil. The Boise study is more extended and is particularly suggestive and helpful.

Your committee feels that the positive side of language training needs more emphasis than the assigned task of "elimination" that

has been placed upon it permits. The following recommendations abstracted from the Report of the Minnesota Committee, Bulletin No 51, are offered as a brief positive suggestion:

“In grades I and II, we note a definite tendency to imitate and reproduce the actions and words of those about them. Thru his reading the child easily learns the use of the capital letter at the beginning of the sentence and the period at the close. The minimum of mechanics by the end of the second grade should be:

“Capitals: (1) At the beginning of sentences. (2) The pronoun I. (3) In writing the child's own name and address. (4) In days of which he may have learned. (5) in months learned. (6) In holidays learned. (7) In beginning each line of poetry.

“Final Marks: Period—(1) At the end of sentences. (2) After abbreviations. (3) Question mark after questions. (4) The comma in writing the child's address.

“Abbreviations: Days of the week, months of the year and Mr., Mrs., Dr.”

For the III and IV grades in addition to the mechanics of I and II grades, teach: “Capitals: (1) In all proper names. (2) As needed in writing simple letters and notes, and addressing an envelope. (3) As needed in the undivided quotation. (4) Titles of stories, poems, books, etc.

“Final marks: Exclamation point.

“Comma: (1) In a series. (2) In a simple quotation. (3) As needed in letter forms.

“Abbreviations and contractions: As needed in daily work—don't, doesn't, I'm, I'll.

“The apostrophe in possessives.

“Other forms needed to make thots clear: (1) Quotation marks. (2) Paragraph form, including indentation and regular margin.”

In grades V and VI, vocabulary rapidly develops, if the needed good literature is heard and read.

“Better connectives will be chosen to replace the much used ‘and’ and ‘but,’ subordinate clauses will be much used and this is the time to teach the shades of difference between connectives as well as the deeper meaning and function of the paragraph.

“The additional mechanics now demanded may be: Punctuation marks necessary in: (1) Divided and undivided quotations. (2) Using the noun of direct address. (3) All forms of letter writing, business as well as social.

“Mastery of spelling and use of: (1) All kinds of possessives. (2) Simple plurals of several classes of nouns such as those ending in ‘y’, ‘f’, ‘fe,’ ‘o’, etc. (3) Past tense of common irregular verbs.

“Greater accuracy and facility: (1) In letter writing. (2) Sentence structure. (3) Paragraphing.”

Grades VII and VIII. “The mechanics will be motivated by the subject matter or the purpose of the composition, whether for example, the work is to appear in a school paper, or a real newspaper, to be given at a school assembly, or at the annual school exhibit.

“The positive program for formal grammar in the eighth grade should be greatly simplified.”

“The degree of accuracy to be demanded in each grade will be a variable quantity, since it will depend upon:

“1. The teachers’ standards during the training process.

“2. Individual difference in pupils.

“3. Time given for any particular test which might be made, and probably, upon other factors.

“By the end of the eighth year children should be able to:

“1. Say something worth while (whether original or gleaned from others).

“2. Write with fair facility, using good vocabulary and correct English.

“3. Punctuate and paragraph so as to make the meaning clear.

“4. Spell correctly at least 95 per cent of all words used.

“5. Write at least legibly and neatly.”

This modified program emphasizes the incidental teaching of language forms in connection with oral and written composition. It gives time for work along the line of appreciation in literature and expression and for drills which will fix the mechanics of composition. The changes suggested are in the method of approach and in the elimination of the non-essentials. The amount of time to be devoted to the subject should not be reduced. No text book in grammar should be placed in the hands of pupils before the eighth grade and then largely as a reference. The teacher should organize the eighth grade work, limiting the details to the ability of the pupils to understand and appreciate. Attention to correct expression in written and oral work should not be confined to the language lesson, but should receive equal attention in all subjects and all grades. The amount of written work should be reduced so that what is done may be held to the right standards.

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WRITING.

While the committee has not been able to make a detailed investigation in writing, it is convinced that considerable effort is expended in raising the quality of the writing of children to a standard higher than necessary for the demands of society and higher than the standard maintained by people in the community who constantly use writing in their business. Only a reasonable standard should be required of pupils and when this standard has been attained they should be excused from further drill with the understanding that they begin drill again as soon as their writing drops below the standard set. The detailed interpretation of the meaning of a reasonable standard is more difficult and should certainly be more moderate when the schools of the entire state, country and village schools as well as the city schools, are considered. All studies thus far made have related to city school standards. The committee ventures to use, herewith, the writing requirements of a

particular city school system (South Bend) as being as nearly reasonable as anything which has appeared. They set "Quality 60" of the Ayres scale (or "Quality 12" of the Thorndike scale) as the standard for the upper grades. They indicate, also, the speed requirements per minute and indicate the number of pupils who are expected to reach the standard. In detail, the standard is as follows:

WRITING REQUIREMENTS.

Grade	Ayres Quality	Speed, Letters per Minute	Per Cent of Pupils Required to Make These
3B -----	40	45	75 per cent
3A -----	40	45	80 per cent
4B -----	40	50	75 per cent
4A -----	40	50	80 per cent
5B -----	50	55	75 per cent
5A -----	50	55	80 per cent
6B -----	50	60	75 per cent
6A -----	50	60	80 per cent
7B -----	60	65	75 per cent
7A -----	60	65	80 per cent
8B -----	60	70	75 per cent
8A -----	60	70	80 per cent

No attempt has been made to set standards for the high school work. It is generally conceded that the writing as a whole deteriorates in the high school. No doubt enough attention should be given to the work to maintain the 8th grade standard for all pupils. while for the commercial classes a higher speed and quality should be attained. In the high school, as well as in the grades, it is suggested that the writing will be improved by requiring less written work and by arranging that all work handed in shall be in pen and ink and shall be given reasonable time for preparation. The standards as suggested above are to be maintained in all written work, not alone in the writing exercises.

DISCUSSION.

The movement for the definite measurement of handwriting was started by the publication of the Thorndike scale of handwriting in the Teachers College Record. The stimulus given by Dr. Thorndike was chiefly in the measuring of quality, although he gave a

little attention to speed in the discussion of his scale, indicating that speed is an essential factor and is in itself a good indication. In this discussion of speed, Dr. Thorndike made use of the material furnished him by Dr. C. W. Stone. Dr. Thorndike made notable contribution, also, in emphasizing the fact that a reasonable standard should be required and that differences in quality in different city systems was apparently not due to differences in time expenditure. The publication of the Thorndike scale made measurement on a different basis possible and led immediately to attempts to fix standards for the various grades. This is certainly desirable from the standpoint of the teacher in the school room. It enables her to know when she is doing satisfactory work and gives her a definite goal which she is expected to reach in her particular grade.

Prof. G. M. Wilson, when superintendent of the Connersville, Indiana, schools, made one of the first systematic efforts toward establishing a standard for speed as well as quality in the various grades of the school system. The first step in the procedure consisted in measuring and in systematizing the speed, giving range as well as median, from each grade from the first through the high school. The teachers of the school were also involved in this study.

The first measurement showed the following practice in the school system:

Grade	Speed (Letters per Minute)		Quality (Thorndike Scale A)
	Median	Range	
1B -----	22	8— 26	9.2
1A -----	9	5— 19	9.5
2B -----	17	7— 45	10.1
2A -----	14	7— 30	10.4
3B -----	20	10— 54	9.9
3A -----	36	9— 66	10.3
4B -----	48	14— 86	10.2
4A -----	60	29—131	10.0
5B -----	51	30— 84	10.2
5A -----	52	28— 84	10.3
6B -----	71	43—100	11.4
6A -----	60	43— 87	11.7
7B -----	58	22— 91	11.4
7A -----	55	31— 95	11.7
8B -----	86	54—108	11.2
8A -----	74	26— 96	11.0
9th year -----	81	48—119	11.7
10th year -----	91	69—120	11.8
11th year -----	100	91—211	11.5
12th year -----	108	78—150	11.8
Teachers -----	98	76—126	12.9

The plan of measuring speed was to have pupils write familiar copy for two minutes, taking one-half of the number of letters as the speed per minute. This plan has since been followed by investigators. This study revealed for the first time what has since been more fully established that there was practically no increase in speed from the fourth to the eighth grade, and that quality, taking grades as wholes, was practically on a level from the third grade up.

Following the study showing actual conditions, a tentative standard was arranged and placed in the hands of each teacher throughout the system, with directions to work toward the standard and see what per cent of their pupils they could bring to the required standard. About the same time, Dr. Freeman, of the University of Chicago, began the construction of a standard by the use of the Thorndike scale. A discussion of these standards are brought together by Dr. Bobbitt, on pages 40 and 41 of the Twelfth Year Book, of the National Society for the Study of Education. The standards there indicated must be regarded as tentative and as the first attempt to fix grade standards in writing. A more exhaustive study is contained in the Fourteenth Year Book of the National Society, pages 61-77. This investigation was made by Dr. Frank N. Freeman, of the University of Chicago, in an attempt to determine the minimum requirements for handwriting in the grades. The study involved the grading of about 34,000 papers in 56 cities throughout the United States. Not only were the averages secured, but the average for the upper half and the lower half were likewise indicated. This was arranged in such a way that speed and quality are both represented. That is, the best writing was not taken in one group and the fastest in another, but the two were brought together. The standard suggested by the summary, indicated herewith in Table II, is as follows:

Average Speed and Quality and Average of Upper and Lower Halves in All the Schools Investigated.

		School Grade						
		2	3	4	5	6	7	8
Speed ---	{ Average of upper half..	35.4	47.7	56.2	64.9	69.2	73.4	77.8
	{ Average of all.....	30.6	43.8	51.2	59.1	62.8	67.9	73.0
	{ Average of lower half..	24.4	37.4	43.4	49.9	52.8	58.5	61.2
Quality -	{ Average of upper half..	43.5	46.1	49.3	54.5	58.5	64.7	67.8
	{ Average of all.....	39.7	42.0	45.8	50.5	54.5	58.9	62.8
	{ Average of lower half..	36.8	38.8	43.2	47.4	51.5	54.2	57.6

It will be observed that the averages in quality and speed are on the whole a little higher than the suggested standard taken from the South Bend schools. City systems with plenty of teacher time and supervision in writing may want to adopt the standard indicated by the above averages of all, or even of the upper half. If this standard is adopted, it will still excuse many pupils from the writing practice period and the standard will be attainable for the majority of the pupils with a reasonable time expenditure. That the average of the upper half is attainable is shown by the investigation, because 25 per cent of the cities in the study have attained that standard.

In attempting to determine the conditions which might produce a superiority in writing results, Dr. Freeman gave considerable attention to the time element. He concludes that the amount of time spent appears to have little influence upon the results. Twenty-three cities of the upper half spent 73.4 minutes per week; twenty-three cities of the lower half, 73.3 minutes per week.

In interpreting the above, it is not necessary to assume that the amount of time spent has no effect upon the efficiency of handwriting. It does appear to mean, however, that it is not desirable to spend more than ten or fifteen minutes a day when this time is spent all in one period. The suggestion is further ventured that if the teacher will set standards for her pupils and will place before them the Ayres scale of handwriting, so that pupils can at any time compare their handwriting with the scale, that the mere presence of the standard will give pupils the necessary incentive to bring their writing to the 100 per cent mark for their particular grade. Mr. Wilson, in his work in the Connersville schools, found that pupils did use the scale constantly, appreciated the opportunity of comparison, and took upon themselves the task of reaching the standard for the grade in order to receive the 100 per cent mark.

In view of the time which Dr. Freeman has spent upon this subject, it seems worth while to here print his proposed standard for quality and speed. The committee is inclined to look upon this standard as a little high for all schools of the state and regards the standard in actual use in the South Bend schools as more acceptable. Dr. Freeman's proposed standard appears below:

	School Grade						
	II	III	IV	V	VI	VII	VIII
Quality -----	44	47	50	55	59	64	70
Speed -----	36	48	56	65	72	80	90

A study of the attainment in handwriting of pupils in various grades of the public schools of the state of Iowa was made recently by Mr. Rollo E. Newcomb, in conjunction with the Extension Division of the State University.

Mr. Newcomb secured specimens of the handwriting of approximately 28,000 Iowa school children, distributed as follows: 1,999 in 150 rural schools of 14 different counties; 4,812 in 41 towns of from 500 to 999 population; 4,620 in 25 cities of from 1,000 to 1,999 population; 4,754 in 17 cities of from 2,000 to 2,999 population; 5,395 in 15 cities of from 3,000 to 9,999 population; 6,285 in 13 cities of from 10,000 population up.

The specimens of handwriting for the study were secured through the hearty cooperation of county and city superintendents in all parts of the state. The children were asked to write the sentence, "Mary had a little lamb," over and over again at natural speed and as well as they could for two minutes. The papers were then graded for quality by the Ayres' scale and for speed by counting the number of letters written per minute.

As a result of the study Mr. Newcomb was able to give standards for speed and quality of handwriting in Iowa. His conclusions, together with a statement of the standards for speed and for quality, were as follows:

1. The State Norm or Standard speed and quality for each grade of the public schools of Iowa as determined by this study is as follows:

	Quality.	Speed.	Gain in Quality.	Gain in Speed.
Grade One	28.5	29.
Grade Two	35.6	39.2	7.1	10.2
Grade Three	39.8	49.5	4.2	10.3
Grade Four	44.5	61.8	4.7	12.3
Grade Five	49.	65.2	4.5	3.4
Grade Six	52.3	75.2	3.3	10.
Grade Seven	57.1	75.	4.8	2.
Grade Eight	61.	76.5	3.9	1.5

2. The rate of progress from grade to grade is fairly uniform as will be seen in column three above. The average is 4 points on the Ayres' scale.

3. All grades show progress in speed over the attainment of the preceding grade except Grade Seven, which shows a slight loss. Grade Eight gains only 1.3 letters over Grade Six.

4. Gain in speed is largest in Grades Two, Three, Four and Six, as will be seen in column four above.

5. As compared with Freeman's average results from 30,000 papers selected at random from a similar test, given in cities of over 30,000 population in the United States, the medians for each of these grades show a deficiency in quality and an excess in speed. The former is more marked in Grades Two, Three and Six. The latter is more marked in Six, Four and Two.

6. As will be seen from the following tables when these State Medians are compared with Freeman's ideal standard the conclusion last mentioned is still true except that Grades Seven and Eight fall below in speed.

7. In view of this it is evident that more emphasis should be placed upon quality especially in the primary grades, and more upon speed in the Grammar grades.

One other conclusion is worthy of careful consideration. If we compare the median scores made by country school children with the scores made by children in cities of 10,000 and over, we find that the difference in speed and quality between children in the city and children in the country is surprisingly slight. Children in the country write on the average for all grades between two and three letters more per minute than do children in cities. On the other hand, the quality of the handwriting of city children is about two and one-half points better. Such a slight difference suggests that our rural schools are in general teaching handwriting as well as our city schools.

For the benefit of those who desire to know the variations in attainment the following two tables taken from Mr. Newcomb's material are added:

QUALITY—Scored on Ayres Scale.

Grades.	I	II	III	IV	V	VI	VII	VIII
Attained by								
75% of pupils	20.	28.9	31.5	35.1	41.1	44.2	50.1	51.9
Attained by								
50% of pupils	28.5	35.6	39.8	44.5	49.	52.3	57.1	61.
Attained by								
25% of pupils	36.1	44.4	48.	51.7	55.5	61.	66.3	70.3

This table is to be read as follows: 75% of the pupils of the first grade write as well or better than a quality slightly below score 20 on the scale. 50% write as well or better than a quality 28.5 or

slightly below score 30 on the scale. The best 25% write as well or better than a quality 36.1 which means slightly better than half way between qualities scored 30 and 40 on the scale. Another way of stating it would be: The poorest 25% of the first grade pupils write poorer than score 20 on the scale; a little less than 50% of the first grade pupils write as well or better than score 30 on the scale; and much less than 25% of the first grade pupils write as well or better than score 40 on the scale. The figures for the other grades, two-eight, are read in the same way.

SPEED—In Letters Per Minute.

Grades.	I	II	III	IV	V	VI	VII	VIII
Attained by								
75% of pupils	19.7	28.9	39.2	49.1	53.3	49.9	63.7	65.3
Attained by								
50% of pupils	29.	39.2	49.5	61.8	65.2	75.2	75.	76.5
Attained by								
25% of pupils	40.8	49.9	62.6	73.5	80.4	85.6	87.4	89.2

THE SOCIAL DEMAND UPON WRITING.

Apparently no one has successfully measured the social demands upon writing. Dr. Thorndike pointed out that 1,000 Teachers College students wrote at a standard about two points below good eighth grade writing. Mr. Wilson's study showed that his teachers wrote at "Quality 12.9" and he has made other measurements of the writing of mature people as follows:

100 Graduate Students, Teachers College, Median 10.5, Range 8-14 (of the Thorndike scale).

100 Teachers in Institute, Perry County, Ind., Median 10.9, Range 9-14.

100 Teachers in Institute, Green County, Ind., Median 10.8, Range 9-13.

100 Teachers in Institute, Ripley County, Ind., Median 10.7, Range 9-14.

100 Inquiries for Help, Social Service Bureau, New York City, Median 10.2, Range 8-14.

100 applications for positions ranging from \$10 a week to \$5,000 a year, Social Service Bureau, New York City, Median 11.4, Range 9-15.

Signatures to 100 bank checks, Median 9, Range 6-13.

250 signatures on a hotel register; Mode 7, Median 9, Range 7-15.

It appears from the above that when pupils get out of school they write at a standard that is only a little above legible. That is, they write at the standard which serves the purpose of record or communication and they do not waste time or energy in attempting to do more than serves that purpose. The exception to this is in commercial lines such as clerks in the office of life insurance companies who are required to write policies or other highly specialized writing work. The conclusion seems to be that while the schools may secure an artificial standard, it is not held after the pupils leave school. They drop to the standard of social utility.

Some attempts have been made to arrive at a society standard by other methods than the above. For instance, asking business men which standard they prefer among their employes. This is manifestly the wrong way to go about it. They prefer a good standard, of course, and will select the best. However, an examination of the writing of their employes will show that they are using a much lower standard. Dr. Freeman apparently conducted an investigation along the same lines that was so guarded as to secure reasonable results. His table shows that the quality which is most frequently regarded as essential for candidates for positions in business houses is that of "60" on the Ayres scale (corresponding to "Quality 12" on the Thorndike scale). In further discussion of this standard, he concludes that 60 per cent of the total population would apparently be benefitted by reaching the standard set for the eighth grade.

In the light of the above discussion, the committee's recommendations seem justified. The standard should be reasonable, the time cost should not exceed ten or fifteen minutes per day and the pupil should have an opportunity of making his own comparison with the scale. The Ayres Scale may be secured from the Russell Sage Foundation, 120 East Twenty-second Street, New York City, Cost 5 cents. Teachers will find no difficulty in making use of the writing scale. The thing to do is to secure a copy of one of the standard scales and proceed to use it. The pupils will soon use it with a great degree of accuracy and with much enjoyment.

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ELIMINATION OF USELESS AND OBSOLETE MATERIALS FROM ELEMENTARY GEOGRAPHY.

For the convenience of the reader recommendations concerning the elimination of useless and obsolete materials from elementary geography are briefly summarized at the beginning of this report. For a fuller explanation of the reasons for each recommendation the reader's attention is directed to the discussion which constitutes the major portion of the report.

SUMMARY OF RECOMMENDATIONS.

First: Your committee respectfully recommends that the formal study of geography in Iowa schools be limited to the fourth, fifth, sixth and seventh grades. By formal study is here meant daily recitation periods with a textbook in the hands of the pupils. This is not meant to exclude informal or incidental consideration of geographical facts in other grades in connection with reading, language, history and industrial work.

Second: Your committee recommends that, so far as possible, the maximum daily time devoted to recitations in geography be limited to twenty minutes in the fourth grade, twenty to twenty-five minutes in the fifth and sixth grades, and twenty-five to thirty minutes in the seventh grade; that the minimum daily time be not less than ten minutes in the fourth grade, fifteen minutes in the fifth and sixth grades, and twenty minutes in the seventh grade. In schools where geography is not taught every day in the week the committee recommends the following maximum and minimum weekly time for each grade:

	4th grade	5th grade	6th grade	7th grade
Maximum weekly time	80 min.	80-100 min.	80-100 min.	125-150 min.
Minimum weekly time	40 min.	75 min.	75 min.	100 min.

Third: It is recommended that home or local geography be taught in the first part of the fourth grade as a necessary basis for the study of distant regions. It should include a first-hand knowledge of the surface features of the home region; of the natural products of the region; of the source of raw materials for the local manufactories; of the advantages and disadvantages of the locality as influenced by physiography; of the reasons for the exchange of commodities through stores; of railroad, telegraph and telephone lines; and other facts in order to secure the fullest possible basis of interest and real experience for the interpretation of distant conditions.

Fourth: The committee unanimously endorses the statement made by McMurry in an article on "Principles Underlying the Making of School Curricula," Teachers' College Record, September 1, 1915, in which he says: "The subject matter for a curriculum should be selected from among those experiences that are related to life, and are likely, owing to their intrinsic nature, to appeal to the pupils directly as worth while—" "The relative importance of subject-matter, determining its final admission into the curriculum and its relative prominence there, must depend mainly upon its relative importance in social life, and the pertinence of its relations to the purposes of the school."

Fifth: It is recommended that, in accordance with the aim stated and in order to avoid formal textbook procedure in teaching and studying geography, the work be arranged as fully as possible around real problems. This will insure greater motive and interest. Problems which are vital in the lives of the pupils should be utilized. Otherwise it is doubtful if "problematic" methods of treating geographical material will be more effective than the "systematic" method now so commonly used.

Sixth: It is recommended that only the most essential facts of geography be fixed by drill. To name all the essential facts would be a difficult undertaking. After a careful consideration of all the available reports on what should be eliminated and emphasized in geography, the committee unanimously agreed to accept, for the most part, the recommendations made in the report of the Committee on Elementary Course of Study of the Minnesota Educational Association. The Minnesota committee, appointed by the city superintendents' section of the Minnesota Educational Association, made their report in March, 1914. The committee sent letters to the 3,700 members of the Association calling for suggestions

along definite lines with reference to elimination of subject matter in geography and certain other subjects. Of the replies received, eighty pertained to geography. The suggestions varied considerably in clearness and definiteness. The conditions in Iowa are probably similar to those in Minnesota, and although recommendations based upon the opinions of a few teachers are not the most desirable means of determining eliminations, their conclusions are at least suggestive.

A. *Map Sketching.* The committee agree that map sketching should be emphasized in each grade, and that the items included should be about as follows: (1) It should be possible for each child by the end of the seventh grade to draw an outline map of each of the continents, and to sketch in the boundaries of the countries and locate the leading cities. He should know something about these cities besides their mere location, and if there is a relation of importance between location and the surroundings, this relation should be known. In a continent sketch only the main seas, gulfs, peninsulas and islands should be named. (2) Every child should be able to sketch a map of the local community, local county, state of Iowa, and the United States. He should be able to locate the principal mountain ranges, rivers, lakes, bounding waters, peninsulas, islands, cities, canals and railroads as listed below. No political divisions should be required beyond the larger ones of North America (Alaska, Canada, United States, Mexico, Central America). No political divisions on the map of the United States should be required except the location of Iowa; none on the map of Iowa except the local county, and the five or six largest cities and institutional centers; none on the county except the location of local town and the principal cities and villages.

B. *Mountain Ranges*, location and comparative elevation:

1. North America: Rocky, Sierra Nevada, Cascade, Appalachian.
2. South America: Andes.
3. Eurasia: Alps, Ural, Pyrennes, Caucasus, Himalaya.
4. Africa: Atlas.

C. *Mountain Peaks and Volcanoes*, location and comparative elevation:

1. North America: McKinley, Rainier, Shasta, Hood, Washington, Pike's Peak.
2. South America: Cotopaxi.
3. Eurasia: Blanc, Vesuvius, Everett.

4. Africa: None required.

D. *Plateaus and Plains*, location and comparative elevation:

1. North America: Great Basin, Colorado Plateau, Laurentian Plateau, Great Plains.

2. South America: Brazilian Plateau, Llanos, Pampas, Selvas.

3. Eurasia: Desert of Gobi, Plateau of Tibet, Plateau of Iran.

4. Africa: Desert of Sahara.

E. *Peninsulas*, location. (The elimination is not extensive for the reason that it seems best to emphasize in this way the outlines of the continents):

1. North America: Labrador, Nova Scotia, Florida, Yucatan, Lower California, Alaska.

2. South America: None.

3. Eurasia: Kamchatka, Korea, Malay, Indo-China, India, Arabia, Balkan, Italy, Spanish, Danish, Scandinavian.

4. Africa: None required.

F. *Rivers*, location and commercial importance:

1. North America: St. Lawrence, Hudson, Potomac, Mississippi, Missouri, Ohio, Arkansas, Rio Grande, Colorado, Columbia, Yukon, Mackenzie, Nelson-Saskatchewan, principal rivers of state and county.

2. South America: Orinoco, Amazon, Plata-Parana.

3. Eurasia: Hoang, Yangtze, Ganges, Indus, Euphrates, Volga, Danube, Rhone, Seine, Thames, Rhine, Elb.

4. Africa: Nile, Niger, Zambesi, Kongo.

G. *Lakes*, location and commercial importance:

1. North America: Superior, Michigan, Huron, Erie, Ontario, Great Salt Lake, Winnipeg.

2. South America: Titicaca.

3. Eurasia: Caspian (Sea).

4. Africa: Victoria Nyanza.

H. *Islands*, location and commercial importance:

Greenland, Iceland, Newfoundland, West Indies (Cuba, Haiti, Porto Rico, Jamaica), Vancouver, Pribilof, British Isles (Great Britain, Ireland), Sardinia, Sicily, Ceylon, East Indies (Borneo, Sumatra, Java), Japanese, Philippine, Guam, Hawaiian, Samoan, Madagascar, New Zealand.

I. *Gulfs, Bays, Seas, Straits*, location:

1. North America: Hudson Bay, Gulf of St. Lawrence, Chesapeake Bay, Gulf of Mexico, Carribbean Sea, Gulf of California, Puget Sound, Bering Sea.

2. South America: Strait of Magellan.

3. Eurasia: Japan Sea, China Sea, Bay of Bengal, Arabian Sea, Black Sea, Bosphorus Strait, Red Sea, Mediterranean Sea, Strait of Gibraltar, Bay of Biscay, English Channel, Strait of Dover, North Sea, Baltic Sea.

4. Africa: Gulf of Guinea.

J. *Capes*:

1. North America: Cape Cod, Hatteras, Henry.

2. South America: Cape Horn.

3. Eurasia: North Cape, Land's End.

4. Africa: Cape of Good Hope, Cape Verde.

K. *Cities*, location and for what noted. Capitals of states and foreign countries are eliminated except as they appear in the list of commercial centers:

NORTH AMERICA.

United States:

Atlanta, Ga.	Indianapolis, Ind.	Portland, Ore.
Baltimore, Md.	Jacksonville, Fla.	Portland, Me.
Birmingham, Ala.	Juneau, Alaska	Providence, R. I.
Boston, Mass.	Kansas City, Mo.	Richmond, Va.
Buffalo, N. Y.	La Crosse, Wis.	Rochester, N. Y.
Butte, Mont.	Los Angeles, Cal.	San Antonio, Texas
Charleston, S. C.	Louisville, Ky.	St. Louis, Mo.
Chicago, Ill.	Memphis, Tenn.	St. Paul, Minn.
Cincinnati, Ohio	Milwaukee, Wis.	Salt Lake City, Utah
Cleveland, Ohio	Minneapolis, Minn.	San Francisco, Cal.
Columbus, Ohio	Mobile, Ala.	Savannah, Ga.
Dayton, Ohio	Nashville, Tenn.	Scranton, Pa.
Denver, Colo.	Newark, N. J.	Seattle, Wash.
Des Moines, Iowa	New Haven, Conn.	Sioux City, Iowa
Detroit, Mich.	New Orleans, La.	Sioux Falls, S. D.
Duluth, Minn.	New York City, N. Y.	Spokane, Wash.
Fall River, Mass.	Omaha, Neb.	Syracuse, N. Y.
Fargo, N. D.	Panama, Canal Zone	Toledo, Ohio
Galveston, Texas	Paterson, N. J.	Washington, D. C.
Grand Rapids, Mich.	Philadelphia, Pa.	
Hartford, Conn.	Pittsburg, Pa.	

Canada: Montreal, Toronto, Winnipeg, Vancouver, Ottawa, Quebec, Halifax.

Mexico: Mexico City, Vera Cruz.

Central America: Guatemala.

West Indies: Havana.

SOUTH AMERICA.

Argentina: Buenos Aires. Brazil: Rio de Janeiro. Bahia. Chile: Santiago, Valparaiso. Colombia: Bogota. Ecuador: Quito. Peru: Lima. Uruguay: Montevideo. Venezuela: Caracas.

EUROPE.

Austria-Hungary: Vienna, Budapest. Belgium: Brussels, Antwerp. Denmark: Copenhagen. England: London, Liverpool, Manchester, Birmingham, Sheffield, Leeds. France: Paris, Marseilles, Lyon, Havre. Germany: Berlin, Hamburg, Munich, Leipzig. Greece: Athens. Italy: Naples, Milan, Rome, Florence, Venice. Ireland: Belfast, Dublin. Netherlands: Amsterdam, The Hague. Norway: Christiania. Portugal: Lisbon. Russia: Petrograd, Moscow, Odessa. Scotland: Glasgow, Edinburgh. Spain: Madrid. Sweden: Stockholm. Switzerland: Zurich. Turkey: Constantinople.

ASIA.

Arabia: Mecca. Asiatic Turkey: Smyrna, Damascus, Jerusalem. China: Canton, Shanghai, Victoria (Hong Kong), Peking. India: Bombay, Calcutta. Japan: Tokyo, Osaka, Yokohama. Persia: Teheran. Siberia: Vladivostok. Straits Settlements: Singapore, Transeaucasia, Baku.

AFRICA.

Cairo, Alexandria, Tunis, Johannesburg, Algiers, Cape Town, Kimberly.

AUSTRALIA AND ISLANDS OF PACIFIC OCEAN.

Sydney, Melbourne, Manila, Honolulu.

L. *Canals*, location and importance:

Welland, Erie, Panama, Suez, Kaiser Wilhelm (Kiel).

M. *Railroad Systems*, location of main lines and terminals:

Great Western, Chicago, Milwaukee & St. Paul (and Puget Sound); Chicago & Northwestern; Chicago, Rock Island & Pacific; New York Central; Illinois Central; Atchison, Topeka & Santa Fe, and railroads of local county.

N. *Industries and Occupations*:

No elimination seems desirable.

O. *Approximate Latitude and Longitude*:

Des Moines, New York City, New Orleans, San Francisco, Manila, London, Rio de Janeiro, Cape Town, Panama, Constantinople.

P. *Bases of Comparison:*

(a) In area: Local county, Iowa, United States, or North America.

(b) In population: Local city, Des Moines, New York City, Iowa or the United States.

(c) In distances: From local community to Des Moines, from Des Moines to Chicago, or from New York City to Liverpool.

Q. *Governmental Terms*, explained, with one example of each:

Monarchy, republic, colony, territory, congress, parliament, legislature, county commissioners, city council, town board, president, king, emperor, czar, sultan, governor, mayor.

R. *Buildings, Monuments, Historical Places, Natural Wonders*, location and description:

Statue of Liberty.	Niagara Falls.
Bunker Hill Monument.	Yellowstone National Park.
Pyramids of Egypt.	Grand Canyon of the Colorado.
The Vatican.	Great Trees of California.
Westminster Abbey.	Mammoth cave.
White House.	Mount Vernon.
Federal Capitol.	Gettysburg Cemetery.
State Capitol.	West Point.
The Louvre, Paris.	Annapolis.

S. *Comparative Statistics*, limited to: (Not to be memorized)

1. Five leading exports of the United States.
2. Five leading imports of the United States.
3. Relation of exports and imports of United States in value.
4. Three greatest cotton producing states.
5. Two greatest cotton producing countries of the world.
6. Three greatest wheat producing states.
7. Three greatest wheat producing countries of the world.
8. Three greatest corn producing states.
9. Three greatest sugar producing countries of the world.
10. Three greatest tobacco producing countries of the world.
11. Three greatest tea producing countries of the world.
12. Three greatest coffee producing countries of the world.
13. Two greatest fruit producing states.
14. Two greatest beef producing states.
15. Two greatest butter producing states.
16. Two greatest wool producing states.
17. Four greatest wool producing countries of the world.
18. Two greatest silk producing countries of the world.

19. Two greatest coal producing states.
 20. Two greatest coal producing countries of the world.
 21. Two greatest iron producing states.
 22. Two greatest iron producing countries of the world.
 23. Two greatest petroleum producing states.
 24. Two greatest petroleum producing countries of the world.
 25. Two greatest gold producing states.
 26. Two greatest gold producing countries of the world.
 27. Two greatest copper producing states.
 28. Five largest cities of the world.
 29. Five largest cities of the United States.
 30. Three largest states in area.
 31. Two largest states in population.
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DISCUSSION OF FOREGOING RECOMMENDATIONS.

The first and second recommendations concern the amount of time to be spent and the grade-occurrence of geography. Perhaps the most thorough-going study of the place of geography in the elementary grades is the one made by Superintendent Hilliard of Sigourney, in his Masters' Thesis in the College of Education at the State University. Mr. Hilliard made a critical analysis of the content of 191 courses of study in geography covering forty of the forty-eight states in the Union.

From his study Mr. Hilliard concludes that geography is at present taught in every grade from the first to the ninth inclusive. However, the number of schools offering geography in grades 1, 2, 3 and 9 are rather infrequent. It appears that the grades in which it is most commonly found are 4 to 7 inclusive. The committee, therefore, recommends that the formal study of geography be confined to these grades.

Mr. Hilliard also studied the amount of time devoted to geography in different grades in 136 cities. He concludes that geography is for the most part taught incidentally in grades 1 and 2, in no city is a formal period of time devoted to the subject in those grades. The variations in the amount of weekly time devoted to geography in grade 3 is from 20 minutes to 200 minutes. In the fourth grade the variation is from 20 minutes to 300 minutes. In the fifth grade the variation is from 25 minutes to 300 minutes. In the sixth grade 25 to 275; in the seventh grade 30 to 300; and in the eighth grade 50 to 300. It appears from this that there is ab-

solutely no fixed standard by which to determine the amount of time that should be devoted to the study of geography. If we should follow the standard of current practice the average amount of time devoted to geography during the week in each grade would be as this committee has recommended.

The committee does not feel that the third and fourth recommendations need any further elaboration. The questions involved have been considered so repeatedly in educational discussions that leading school men today accept them as a matter of course.

The fifth recommendation concerning the "problematic" organization of the materials of geography should be given careful consideration. The geography taught in a particular grade may be organized from several different points of view. Undoubtedly, teachers as a rule follow the text. It is also true that the text is usually somewhat systematic in its organization. This was especially true of the older textbooks. They began with a consideration of the "World as a Whole" and proceeded logically to analyze its parts. Such books gave little consideration to the fact that the child in his everyday life did not meet with geographical experiences in their logical order. The old method of teaching the counties of the state in alphabetic or tier order, is a good illustration of the absurdity of this method. Throughout such books, the *structure* of geography was chiefly emphasized and consciously or unconsciously the aim was to teach a body of highly organized facts.

Problematic methods of teaching geography begin with the everyday experiences of the child and teach the facts around the solution of his difficulties. By this method facts are taught in their *functional* relationship. The best discussion of this method is one by McMurry in the article quoted earlier in this report.

In making the sixth recommendation, the committee wishes to state that topics omitted may be important, and their omission should not be construed to mean that no study should be made of them. Climatic conditions, for example, should receive careful study. The elimination made possible in this way will greatly reduce the mass of facts, figures, places and things which a teacher of geography has felt compelled to present to her pupils in order to prepare them adequately for state examinations.

In order to test the Minnesota recommendations in a small detail at least, a list of capes was submitted to the vote of fifty Iowa teachers and superintendents. Their votes on the capes to be

eliminated, those to receive less attention, and those which should remain, are given herewith as showing substantial agreement with the Minnesota recommendations. The eight capes receiving a majority to remain are in black faced type.

Name of Cape	Eliminate	Emphasis Less	No change
North America:			
Capes Flattery	18	22	10
Farewell	28	10	12
Race	34	5	11
Mendocino	34	14	2
Sable	30	9	11
Conception	34	9	7
Cod	4	4	42
San Lucas	47	2	1
Hatteras	20	3	27
Blanco	30	5	15
Lookout	30	5	15
Fear	20	10	20
Charles	18	10	22
May	17	15	18
San Blas	45	4	1
Montauk Point	45	3	2
Monomy Point	45	3	2
Cape Ann	20	5	20
Henlopen	38	5	7
Henry	5	10	35
Carnaveral	47	0	3
Catoche	48	0	2
Gracias de Dios	46	2	2
Corriel	48	1	1
San Laz	47	1	2
Bald	47	2	1
South America:			
Pt. Sallinas	48	0	2
S. Roque	48	0	2
Braco	40	4	6
Frio	40	4	6
Cape Horn	3	0	47
Blanco	38	8	4
Eurasia:			
North Cape	20	0	30
Lands End	18	4	28
Finisterre	45	5	0
St. Vincent	46	0	4
Wrath	40	5	5
Matapan	45	5	0
Cambodia	39	4	7
Lopotka	46	4	0
East Cape	40	0	10
Chelyaskin	41	5	4

Name of Cape	Eliminate	Emphasis Less	No change
Africa:			
Guardafin	40	5	5
Amber	41	4	5
Ste. Marie	45	5	0
Corrientes	41	5	4
Good Hope	3	0	47
Frio	39	7	4
Palmas	42	5	3
Verde	10	5	35
Blanco	30	10	10
Bojador	41	7	2
Bon. Lopez	40	5	5
Agulhas	38	8	4
Australia:			
York	37	6	7
Sandy Hook	42	0	8
Byron	40	8	2
Howe	44	0	6
Leewin	40	8	2
Steep Pt.	41	5	4
North West	37	7	6
Leveque	39	2	9
New Zealand:			
North Cape	35	5	10
South Cape	35	5	10

The committee also wishes to state that it believes the reorganization of the materials of geography around problems will necessitate an entire re-emphasis upon different topics. Just what this emphasis will be we are not able to predict.

PHYSIOLOGY AND HYGIENE.

Physiology came into the schools as the child of medicine and anatomy, and the first texts were written from that standpoint. We now know that few children ever reach a medical college, and we are content to leave the introductory course in anatomy to such colleges. The physiology work of the grades should be confined to home and community sanitation, personal hygiene and health, food and exercise, fresh air and sleep, and kindred topics.

We recommend for omission from school work and from questions for eighth grade graduation all such topics as the following: The human skeleton, lists of bones, etc., (but not the foods for bone building) ;

Anatomy of the muscular system and lists of muscles (but not the necessity of proper work and exercise) ;

Anatomy of the circulatory system, naming all the paths and parts through which a drop of blood travels (but not the necessity of plenty of oxygen and good food to make blood);

The scientific names of the parts of the alimentary canal (but not the necessity of thorough elimination, dangers of over-eating);

The anatomy of the brain and nervous system (but not the necessity of rest, relaxation, absence of worry, as well as the desirability of periods of vigorous study and thinking);

The anatomy of the eye (but not the rules for proper care of the eye, testing for defects, supplying glasses, etc.).

The proper attention to hygiene and sanitation is a matter of very recent growth, and has followed the important bacteriological studies of Pasteur and Koch. The great practical value of this line of study is now generally recognized. Progressive school men everywhere are giving attention to the new type of work. A recent extended study of courses of study in physiology in city systems shows a strong tendency to omit the work on structure and anatomy and to stress the work on sanitation and hygiene. While the committee has knowledge of this report and its findings, it has not had access to the complete report which is one of the very few studies made along the line of physiology and hygiene. This change of emphasis in physiology which has already taken place in the larger and more progressive cities, should follow in small towns and rural districts. The study of text books made by Superintendent Slacks shows that the old type of work is still largely prevalent in the rural schools of Iowa. The committee recommends that teachers should no longer hesitate to omit the old type of work. They should replace it by work upon sanitation and hygiene which may be expected to function in the life of children and in the community. Anatomy and medical terms should be abandoned in the grade work. Most school book publishers now have good texts meeting the new requirements. A teacher who is unable to change texts should not hesitate to omit undesirable material from present texts.

BIBLIOGRAPHY.

1. Any good Encyclopaedia will show the historical development of anatomy and physiology in accordance with the statement at the first of this discussion.
2. Coleman, "The Peoples' Health."
3. Ritchie, "The Primer of Sanitation."
4. Ritchie, "The Primer of Hygiene."

AMERICAN HISTORY.

Eliminations Recommended.—The committee did not get to the consideration of History until its final meeting. It decided not to attempt independent recommendations, but to print the recommendations of the Minnesota committee with the suggestion that they be accepted tentatively and seriously considered until such time as a fuller and more constructive program may be submitted.

I. *Dates.* Exact dates are of secondary importance and events should be related in time to one another. For purposes of examination only the following dates should be required:

1. 1000 (about) Norse discovery of America.
2. 1492 The discovery of America.
3. 1519-21 Magellan sails around the world.
4. 1607 Settlement of Jamestown.
5. 1619 Slavery introduced into Virginia.
6. 1620 The Pilgrims land at Plymouth.
7. 1643 The confederation of the New England Colonies formed.
8. 1754 Colonial Congress at Albany and Franklin's Plan of Union.
9. 1765 Passage of the Stamp Act and the meeting of the Stamp Act Congress.
10. 1775 Battles of Lexington and Concord and of Bunker Hill.
11. 1776 Declaration of Independence.
12. 1777 The surrender of Burgoyne at Saratoga.
13. 1781 Cornwallis surrenders at Yorktown.
14. 1789 First Congress assembled in New York; Washington inaugurated president.
15. 1793 Cotton-gin invented by Eli Whitney.
16. 1803 Louisiana purchased from France.
17. 1807 First trip of Fulton's steamboat.
18. 1812 War declared against England.
19. 1820. Missouri Compromise adopted by Congress.
20. 1823 Monroe Doctrine announced.
21. 1826 First railroad built in the United States.
22. 1844 First telegraph line established.
23. 1846 Invention of the sewing machine.
24. 1846 Iowa admitted to the Union.
25. 1846-48 War with Mexico.
26. 1850 Clay's Compromise adopted by Congress.
27. 1861 Secession of the South.

28. 1863 Emancipation proclamation.
Battle of Gettysburg.
Battle of Vicksburg.
29. 1866 First Atlantic cable completed.
30. 1876 First Telephone patented.
31. 1878 Electric Light invented.
32. 1898 War declared against Spain.
Battle of Manila.
33. 1903 First Wireless message sent across the Atlantic.
First message sent by the Pacific Cable.

II. *Discoveries, Explorations and Settlements.* Limit the study of the discoveries, explorations and establishment of settlements to the main achievements of the following (or fewer):

- | | |
|---------------|---------------|
| 1. Columbus | 10. Drake |
| 2. Magellan | 11. Raleigh |
| 3. Balboa | 12. Champlain |
| 4. Vespuceius | 13. Hudson |
| 5. Cortez | 14. Marquette |
| 6. De Soto | 15. Nicollet |
| 7. Coronado | 16. Joliet |
| 8. Cartier | 17. La Salle |
| 9. Cabot | 18. Hennepin |

III. *Early Colonies.* Restrict the detailed study of the early colonies to Virginia, Massachusetts, New York and Pennsylvania.

IV. *Wars.* Reduce the study of wars to:

1. Geography of War.
2. Remote and immediate causes of war.
3. Resources, plans and campaigns of opposing forces.
4. Turning point of war.
5. Remote and immediate results.

NOTE.—Omit study of the Colonial wars, except the last.

V. Eliminate the study of all battles except:

1. Battle of Quebec, 1759.
2. Battles of Lexington and Concord, 1775.
3. Battle of Bunker Hill, 1775.
4. Battle of Saratoga, 1777.
5. Battle of Yorktown, 1781.
6. Perry's Victory on Lake Erie, 1813.
7. Battle between Merrimac and Monitor, 1862.
8. Battle of Gettysburg, 1863.
9. Capture of Vicksburg, 1863.
10. Battle of Manila, 1898.

VI. Omit from the study of elementary school history the following topics:

1. Distinctive characteristics of various tariff acts, but explain the meaning of tariff.
2. All presidential campaigns, detailed study of political parties, and party platforms, except:
 - a. Campaigns: Jefferson's, Jackson's, Lincoln's.
 - b. Political parties: Federalist, Democratic, Whig, Republican, Prohibition, and Socialist.
 - c. Party platform of 1860.
3. Financial panics, except of 1837, of 1873, and of 1893.

VII. In view of the eliminations proposed, it seems fitting at this time to suggest:

That Iowa's contributions to our national development should be emphasized in our schools. This would take into account Iowa's part in the Civil and Spanish-American Wars, its industries, its leading agricultural products, and its school system. Correlate with geography. A study should also be made of the leading features of our government, both state and local.

VIII. Pupils should be prepared to write three hundred-word biographies on any of the following:

- | | |
|---------------|---------------------------|
| 1. Columbus | 11. Boone |
| 2. Washington | 12. Morse |
| 3. Franklin | 13. Lincoln |
| 4. Jefferson | 14. Grant |
| 5. Morris | 15. Longfellow |
| 6. Fulton | 16. Whittier |
| 7. Webster | 17. Lowell |
| 8. Clay | 18. Harriet Beecher-Stowe |
| 9. Calhoun | 19. Horace Mann |
| 10. Marshall | 20. Emma Willard |

and the most prominent persons of today, as, Thomas Alvah Edison, Jane Addams, Theodore Roosevelt, Alexis Carrel, George W. Goethals, Luther Burbank, and Woodrow Wilson.

That the international importance of the following topics be emphasized:

1. Washington's Neutrality Proclamation.
2. The Monroe Doctrine.
3. The Impressment of American Seamen.
4. Slavery.
5. Immigration.
6. Commerce.

7. Our Insular Possessions.
8. Arbitration.
9. The "Open Door" policy.
10. The Panama Canal.
11. Other modern problems with historic setting.

While the above shortened lists are an improvement over the cyclopaedic attempts which are all too common in history, the important point to emphasize is that facts must not be considered at all as isolated facts. They are important only when useful in solving a problem which is worth solving. History was originally introduced into the curriculum to improve citizenship and to aid the voters of a democracy in reaching intelligent decisions. Teachers have too often failed to regard the original purpose of history and have been content to drill pupils in the parrot-like repetition of facts. The above recommendations will be helpful in discouraging the large accumulation of such isolated facts.

If history is to serve its original purpose and aid in the understanding and appreciation of the political and social problems of the present, its method must be shaped to that end. But the problem of method is outside the work assigned to this committee.

There is no disposition on the part of the committee to recommend the shortening of the time devoted to history in the schools. It does appear that history properly handled appeals to the interests of children and of grown people. According to Dr. Horn,*—

"One book out of every ten published in 1913 was history. In 1913, one book in every seven consulted in the reference department of New York City Library was a history,—more than were consulted in geography and travel, science and technology combined." Eight per cent of the books drawn for home use were classed as history, as compared with three per cent in the case of technology, three per cent in the case of science, and three per cent in the case of geography and travel. It must also be kept in mind that a large part of the books classified under other headings contain historical material. The percentage of books in history drawn by children is still larger as compared with those drawn by them in science, useful arts, geography, and travel. No data have been found to indicate that the publishers' market, and the public library demand, especially in the case of adults, do not reasonably approximate the actual social demand for history. The large

*Teachers' College Record, September, 1915, p. 34.

amount, relatively, of books consulted in the reference division of the public library, seems particularly significant.

The article, above quoted, gives a careful summary of the more important motives which influence people to read history. The principal motives are:

1. The dramatic human interest involved.
2. To understand historical references met with in newspapers, magazines, books and public discussions.
3. To understand and appreciate the chief problems, conditions, and activities of present day life.
4. To give moral backing by stimulating ideal attitudes and reactions to certain permanent moral situations. Among these ideals patriotism is very important.
5. To prevent provincialism and dogmatism by providing a "shock which stimulates the reopening of problems concerning present social usages."

The committee heartily endorses these statements. It feels that the work in history should be reorganized with these aims in mind, and with the problem method more strongly in evidence. The study of American history in the elementary grades resolves itself into a question of the child's ability to interpret and explain the social and moral problems of the day. In view of this fact, the committee feels that the problem in the reorganization of historical materials is one of elimination, through selection and emphasis. That is, what problems are the most important, and what materials from a history should be selected for the explanation and interpretation of these problems. The selection of such matter as would fall within this category is exceedingly difficult. Owing to the wealth of material, it is rightfully regarded as important, and is recommended for the further consideration of the Association.

SPELLING.

This section of the committee's report is organized under the headings—Introductory Statement, Recommendations, Brief Interpretation of the Recommendations, and Bibliography.

Introductory Statement.

On the basis of the main function which they perform, school subjects may be classified as either *content* or *form* subjects. This report is written from the standpoint that Spelling is preeminently

a *form* study, and that its function is to provide the forms of words needed in written communication. If pupils need to use a word they ought to have it, and if they are to use it in writing they ought to know how to place the right letters in the right order. Written-language-need is, then, the criterion for spelling teaching. It follows from this point of view that the criterion for determining whether the spelling of a word or set of words ought to be eliminated is *use* in written language.

Recommendations.

No attempt is made in this section of the report to include a full justification of the committee's recommendations. A more complete basis for these justifications will be found in the following section and in the research studies of the subject as listed in the bibliography. Those who wish to pursue the question farther will find help in these references and studies.

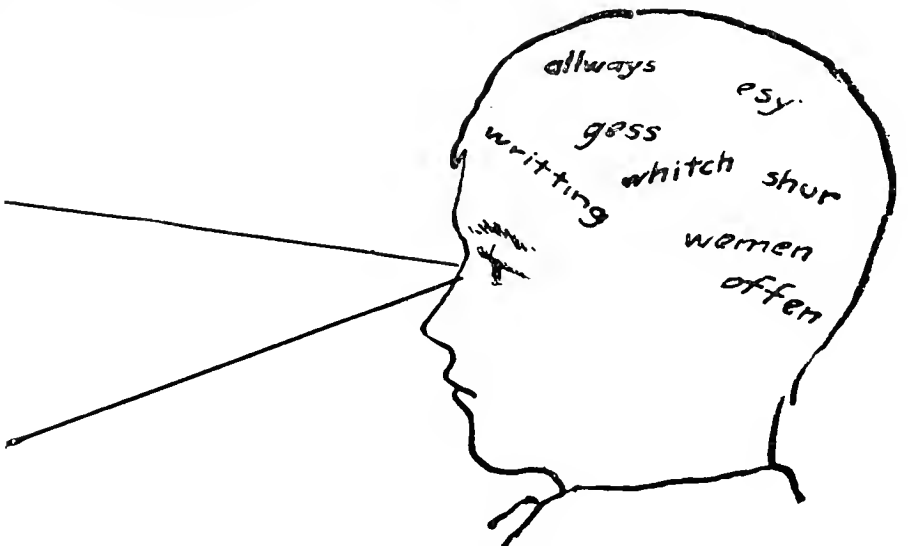
The following is a summary of the recommendations regarding spelling:

1st. *That such words as are not needed in the written language of pupils be eliminated from their spelling lessons.* The acceptance of this recommendation will do much to avoid the undesirable conditions such as portrayed below.

Attempting to learn these:—

spectacle
halo
legacy
gossamer
sluice
lurid
buoyant
linear
aggrieve
superlative
romantic
obstinate

While misspelling these:—



(After Studebaker—Des Moines Annual Report, 1915.)

2nd. *That spelling be omitted from the first grade except as it is taken up in the form of phonograms as part of reading.* Since written language as such has little or no place in the first grade, this second recommendation follows as corollary to the first.

3rd. *That the simplest authorized spellings be taught.* There is no good reason for teaching the more difficult of two authorized forms of spelling.

4th. *That steps be taken to secure authentic minimum spelling lists for schools in typical localities.* It seems certain that children with differing surroundings use different words, hence, the need of differing minimum lists.

5th. *That the emphasis in the teaching of words be determined by the relative difficulty of the words.* Certain commonly used words have been proven to be so difficult that they are known as "spelling demons." This shows that special emphasis is needed in the teaching of such words.

6th. *That special care be taken to develop the spelling conscience.* Pupils should be trained not to allow themselves to leave a piece of written work until they *know* the spelling is correct.

Brief Interpretations of the Recommendations.

These interpretations are not meant to be exhaustive, but merely suggestive, indicating something of the justifications for the recommendations.

1st. *That such words as are not needed in the written language of pupils be eliminated from their spelling lessons.* It has been abundantly shown that pupils do not retain the spelling forms of words which they learn indiscriminately without reference to use. It has also been abundantly shown that pupils do not learn the spelling of the words needed in their written language when their spelling lessons are made up indiscriminately without reference to use; e. g. See the spelling section of the *Des Moines Annual School Report for 1915*. Then, too, the day of exploiting oral spelling ability is happily passed. Hence, it would seem that at least the first work of the spelling lessons should be to equip the learners to spell the words in their written language. The degree to which it is possible and practicable to compile spelling lists that are fully in harmony with this recommendation, is not yet determined; several notable attempts, however, have been made. Chief among these is that of Dr. Jones whose results are embodied in a pamphlet, "A Concrete Investigation of the Material of English Spelling." This pamphlet may be had by addressing the Secretary of the Faculty, State University, Vermillion, S. D., and enclosing ten cents.

Dr. Jones listed the words used by one thousand fifty (1,050) grade pupils, approximately one hundred fifty (150) pupils per grade above the first, in their written language work; and he continued to list them until their written "word wells were drained dry." His is doubtless not the final list and plans are now under way for testing the validity of his findings. (See recommendation four.) However, this list is so notably better for the grades than any other that has come to the knowledge of the committee that it seems advisable to indicate the eliminations that its acceptance might mean. One indication of the extent of these eliminations is found in the fact that Dr. Jones' list includes only four thousand five hundred (4,500) words, while some of the texts that are commonly used in Iowa Schools contain ten thousand (10,000) to fifteen thousand (15,000) words, i. e., on the basis of the Jones lists approximately two-thirds (2-3) of the words now taught should be eliminated. An even greater elimination is suggested by the findings of Dr. Ayres. His investigation of the written vocabularies of adults showed that 542 words constitute seven-eighths of twenty-three thousand six hundred fifty-two (23,652) words used in personal and business letters. Dr. Ayres also discovered that the 1000 commonest words cover more than nine-tenths (9-10) of all the words we write. Another indication as to the eliminations that the adoption of the Jones list would cause, is seen by comparing random selected lessons of the leading books of the state with the words as Dr. Jones found children of the various grades using them; for example, checking the words as listed for the *first* thirty lessons of one of the books most commonly reported as being used in Iowa schools, with the Jones lists, it was shown that of the 492 words in these first thirty lessons only 57.5% were found by Dr. Jones in the written language of second grade pupils; 7½% were among the new words needed by pupils of the third grade; a few others were needed in each of the higher grades and 22.2% *were not needed by pupils of any grade*. Checking the next to the last (the eleventh), 30 lessons of this book showed that of the 696 words listed,—

5 words or 1.0% are in Jones 2nd grade list.

6 words or 1.2% are among the Jones additional words for 3rd grade.

7 words or 1.4% are among the Jones additional words for 4th grade.

5 words or 1.0% are among the Jones additional words for 5th grade.

2 words or 0.4% are among the Jones additional words for 6th grade.

11 words or 2.2% are among the Jones additional words for 7th grade.

11 words or 2.2% are among the Jones additional words for 8th grade.

447 words or 90.5% are not in any grades of the Jones list.

The records of these tests were so noteworthy that it seemed worth while to compare the Jones lists with other leading spellers in use in the state.

The data for determining the leading speller in use in Iowa came from two distinct sources. One is the reports of texts as sent to the state superintendent's office and the other is the questionnaire study of texts conducted by Superintendent Slacks. In both of these lists, two spellers were each reported by approximately 25% of those responding. For professional reasons the names of these books are not used in this report. They and the other books referred to will be designated by letters. The key has been carefully preserved by the writer of this report and professional inquiries concerning these books will be cordially answered by him.

A comprehensive study of Speller A. shows wide deviations in the selection and arrangement of words from the Jones' findings. The words of every other thirty lessons of the first half of the book and the middle and next to the last 30 of the last half were checked against the Jones' lists. The results are given below:

Of the first 30 lessons—492 words:

283 or 57.5% are in Jones' 2nd grade list.

37 or 7.52% are in Jones' 3rd grade additional list.

20 or 4.06% are in Jones' 4th grade additional list.

13 or 2.63% are in Jones' 5th grade additional list.

17 or 3.45% are in Jones' 6th grade additional list.

7 or 1.42% are in Jones' 7th grade additional list.

4 or 0.81% are in Jones' 8th grade additional list.

111 or 22.2% are not in any grade of the Jones' lists.

The results of checking the eleventh were presented on page 47. The seventh is as follows: Of the 503 words

27 or 5.3% are in Jones' 2nd grade list.

13 or 2.5% are in Jones' 3rd grade additional list.

6 or 1.1% are in Jones' 4th grade additional list.

9 or 1.8% are in Jones' 5th grade additional list.

6 or 1.1% are in Jones' 6th grade additional list.

11 or 2.1% are in Jones' 7th grade additional list.

10 or 1.9% are in Jones' 8th grade additional list.

421 or 83.7% are not in any grade of Jones' lists.

Of the 794 words examined in the third grade division of this book only 48.6% are found in the Jones second and third grade lists. Of the 532 words examined in the fourth grade only 28.1% are found in the Jones second, third and fourth grade lists and of the 1,124 words examined in fifth grade only 23.6% are found in the Jones second to fifth grade lists.

Another text that is regarded highly by some that have given this subject careful study is here designated as book E. To test something of how far the words as selected and arranged in this book correspond with children's needs as found by Jones, the first 30 of the 4th grade lessons were checked with the result that of the 647 words in these 30 lessons,—

168 or 25.9% are in the Jones' second grade list.

36 or 5.5% are among the Jones' additional words for 3rd grade.

44 or 6.7% are among the Jones' additional words for 4th grade.

399 or 61% are not in Jones' 2-4 grade lists.

TEACHING WORDS IN WRONG GRADES.

In addition to the waste of overloading, there is that of misplacement. Judged by the words which Jones found children using in the various grades, current spellers cause enormous waste by having words taught at wrong times. A random sampling of one of the newest, and, according to a priori judgment, one of the best texts shows the following as to placing in grades as compared with Jones' findings.

From Spelling Book C.

First 30 lessons of 4th grade (180 words).

82 or 45.5% in Jones' 2nd grade list.

20 or 11.1% among Jones' 3rd grade additional words.

16 or 8.8% among Jones' 4th grade additional words.

62 or 34.4% not in Jones' 2nd, 3rd, or 4th.

First 70 lessons of 5th grade, (573 words).

87 or 15.1% in Jones' 2nd grade list.

30 or 5.2% among Jones' 3rd grade additional words.

49 or 8.5% among Jones' 4th grade additional words.
34 or 5.9% among Jones' 5th grade additional words.
38 or 6.6% among Jones' 6th grade additional words.
21 or 3.6% among Jones' 7th grade additional words.
15 or 2.6% among Jones' 8th grade additional words.
299 or 52.1% not in any grade of Jones' words.

First 44 lessons of 7th grade list, (384 words),
33 or 8.6% in Jones' 2nd grade list.
13 or 3.3% among Jones' 3rd grade additions.
16 or 4.1% among Jones' 4th grade additions.
28 or 7.3% among Jones' 5th grade additions.
29 or 7.5% among Jones' 6th grade additions.
21 or 5.4% among Jones' 7th grade additions.
21 or 5.4% among Jones' 8th grade additions.
223 or 58.07% not in any grade of Jones.

The checking of book A. shows that approximately 94% of the words are not placed according to the findings of Jones.

It may be argued that *no spelling book* should be the exclusive or even the main source of words to be taught. The committee regards this point as well taken; and yet how much of spelling work comes from any source other than the adopted text? The committee believes comparatively little. And even were the ideal use of the book the common practice, how could teachers be expected to know what words to select? If authors of texts who presumably have time to try to select and grade words properly, miss it by from 120% to 230%, as to the number of words children need in the elementary grades, and from 90% to 98% in placing words as to grade in which they are to be taught, busy and comparatively inexperienced teachers can not be expected to choose successfully. (For further evidence on this point see report on the "One Hundred Demons" by 45 second grade teachers. Des Moines Annual Report, 1915—section on Spelling.)

It is these conclusions that have justified the remarkable expenditure of time and energy required for compiling such lists as those of Ayres and the making of such books as the California State Speller, and other similar books; and it is these conclusions that justify your committee in recommending that minimum lists ought to be made for the various typical communities of Iowa, (See recommendation four) and that words not in the list as found for each community be eliminated from the class teaching of spelling in that community.

The need of supplementing general lists by individual lists.

Owing to differences among children in the ideas they wish to express, no general list can be adequate for spelling needs of all pupils even of the same surroundings. The committee therefore recommend that whatever list is taught as the minimum for all pupils, part of the spelling work of each individual pupil should be the making and learning of the list of such additional words as he needs. A convincing example of the importance of personal lists is given in the Des Moines Annual Report, 1915, section on Spelling.

2nd. *That spelling be omitted from the first grade except as it is taken up in the form of phonograms as part of reading.*

Few if any of the better spelling books contain the words for first grade; but the custom of having first grade pupils spell words drawn indiscriminately from the reading is quite common. Obviously if the function of spelling is to furnish the word forms for written-language-communication, there is no place for it except in connection with written composition; and by practically unanimous consent first grade pupils ought not to be taught written language, as such. This means the elimination of all spelling as such for the first grade, and it also means a marked reduction of spelling in the second grade.

3rd. *That the simplest authorized spellings be taught.* Your committee does not recommend radical changes towards simplified forms of spelling, but it does believe that the time has come when obvious difficulties in spelling ought to be eliminated, and their recommendation is, that the simplest forms that are recognized by authoritative dictionaries be accepted and taught. For example, the first list of simplified forms as adopted by the National Educational Association is now fully accepted and should be used in the school room.

But this recommendation should not be interpreted as meaning that only the simpler forms are to be accepted as correct. If pupils have been taught the traditional spellings or if they pick them up these should be accepted as correct.

4th. *That steps be taken to secure authentic minimum spelling lists for schools of typical localities.* This recommendation assumes that the language of children is partially determined by their surroundings; and that excellent as are the Jones, Ayres, and other lists, and much improvement as they promise, they are obviously not perfect; and your committee believes that further in-

vestigation of the spelling needs of Iowa children is an important next step in educational progress. Plans are now under way whereby the word lists of country children are to be determined. The contemplated method is that of Dr. Jones; and he has agreed to co-operate in the research. The first step will be that of determining the word lists in the written language of 4th grade pupils in consolidated country schools. Inspector Woodruff has cordially given his support, and the hearty co-operation of all principals of these schools is asked. The plan is a very simple one, entailing practically no departures from those procedures that would ordinarily prevail in good language work. The main requirement is that each co-operating teacher preserve the language papers of his pupils for the use of the committee and observe certain simple directions. These directions will be furnished in order to preserve the uniformity necessary to secure data for valid conclusions.

5th. *That the emphasis in the teaching of words be determined by their relative difficulty.* Recent studies have made it clear that words of apparent equality as to difficulty vary greatly in the actual difficulty with which children learn to spell them. Until recently no scientific studies had been made of this problem, but the rapid progress along these lines promises much help in the near future and the committee heartily recommends that teachers and school officers avail themselves of the results of these studies. We now have the results of two notable studies; namely, that of Dr. Buckingham¹ and that of Dr. Lewis². The far reaching importance of this recommendation is shown in one of Dr. Buckingham's main conclusions, viz:

“If in a list of 50 words the one word that is incontestably hardest is by more than one-fourth of a representative group of teachers judged to be the easiest, or the easiest but one, that fact in itself is a very good reason why the word is so hard. Pupils misspell it because their teachers do not realize the need of teaching it. If text-book makers disagree so widely as to put the same words in grades that are three, four, and even five years apart, it is proof of the confusion that exists as to how hard words are, and when they should be taught. There are various types of words, and each type requires different treatment. There is the type that does not need to be taught at all. There is the type which appears

¹Spelling Ability, Its Measurement and Distribution, published by Teachers College, Columbia University, pp. 111-112.

²A weighting of the Jones words—as yet unpublished. Those who wish to benefit by Dr. Lewis' findings may do so by writing him, care of Iowa State University.

easy in the lower classes and (grade considered) hard in the upper classes. Such may have been prematurely taught in the lower classes. There is the type that appears to possess special difficulty for the middle grades. This is due to constant cause—e. g., in the case of *whose*, to the learning of the use of the apostrophe in possessives. There are types of errors; there is the problem of substitution, of illegibility, and of omission.”

An example of the far reaching help of the study of Dr. Lewis is seen in the facts:

6th. *That special care be taken to develop the spelling conscience.* The indiscriminate demand that desk-made lists of words be mastered, has developed a grave indifference to spelling as it should function in written language. The emphasis should be sharply shifted from book lists to composition needs and such sensitive consciences should be developed that pupils instinctively quail from wrong spelling in their written work. This should not be interpreted to mean that rough drafts of written work should not be made, but it does mean that before a pupil parts with his written work he should make certain of the spelling therein. To bring this about will require the solution of many pedagogical problems. A full consideration of these problems is beyond the limit of this report. Briefly stated they are: (1) *How to handle the early written work so as to get the spontaneity needed for good language work and at the same time avoid allowing pupils to misspell words.* Young children employ a surprisingly large number of words in their language work; for example, of the 4,500 words in all the Jones lists, 1,927 or approximately 45% are in the second grade list. It is evident that second grade pupils ought not to be required to learn the spelling of this large number of words. Hence the only alternative seems to be to have most of the second grade language oral, to limit their written language to a comparatively few topics, and to have the teacher give special attention to furnishing the correct spellings of the words employed. (2) A second problem for solution is that of *how many words to attempt to teach daily.* Experience has proven that it is easy to attempt so many that most pupils do not learn them thoroly. According to the recent studies of the spelling needs of children and adults, the number required can be covered by teaching as few as two to four per day. The number should vary and be carefully gauged according to difficulty. (3) A third question to be answered is, *when and how to teach the use of the dictionary.* The importance

of the dictionary habit in developing a spelling conscience is evident, and it is probable that careful attention should be given to teaching the use of the dictionary not later than the fourth grade. (4) Another important factor is *the keeping of personal lists for review and drill*. No pupil should allow himself to miss or even to hesitate on a word without adding it to his personal list. These lists should come to be recognized as a helpful means of improvement and should be studied accordingly.

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